



AUTOMOTIVE ELECTRONICS

RAILWAY ELECTRONICS

Quality All





Electronic Design - Quality Production

ESTABLISHMENT:

ERA was founded in 1968 and from the very beginning, became the symbol of quality products and the tradition of designing innovative, creative electronic products. Beginning of the year 2000, ERA renewed its technology and quality and moved to its new and modern electronic production plant. ERA is the leading supplier of Automotive Factories in Turkey for Automotive Electronic Products and exports especially to EU and other countries Worldwide. ERA designs and produces electronic products for Railway Electronics.



FACTORY:

- ◆ Closed Area : 5200 m², 4 floors
- ◆ Production Environment:
 - Conductive Floor
 - Temperature, Dust & Humidity Controlled Climate System
- ◆ Production Capacity:
 - Components Insert Capacity: 16,500,000 pcs/year (1 shift)
 - Soldering Capacity: 630,000 frames/year (size: 230x380 mm)
 - Equipment Capacity: 810,000 units/year



AUTOMOTIVE ELECTRONIC PRODUCTS

Electronic Fluorescent Ballast's and Fittings, LED Lights, LED Lighting Fittings, Digital LCD-LED Clocks, Digital Thermometer Clocks, Bus Sign Units, Vehicle Back-up Alarms, Bus Intercom, DC/DC Converters are produced for **Mercedes-Benz Turk, TEMSA, MAN, Otokar** Buses, Light Commercial Vehicles, Cars and Trucks in Turkey, since 1987.

We are exporting our products to well-known OEM companies such as **VDL BUS Roeselare, Volvo, Evobus, MCV, Oghab** and more than 25 countries like Germany, Ecuador, Spain, Finland, Poland, Hungary, Egypt, Jordan, Iran etc.



RAILWAY ELECTRONIC PRODUCTS

We are used to produce Electronic Fluorescent Ballast's and Fittings since 1973 for railway customers and started to produce LED Lighting Fittings, SMPS LED Drivers, LED Lights, Sign Units, Intercom, for Metro, Train and Fast Trains for Turkish and International customers.

We are transferring our expertise on Automotive Bus Interior Lighting and Passenger Information Systems into Railway electronic products.



New innovative electronic design & manufacturing technologies for rail



MAIN PRODUCTION MACHINES

- ❖ Component Lead Forming & Cutting: CONTACT
- ❖ Conveyor Belt PCB Production Lines: ATU
- ❖ Double Wave Lead-Free Soldering Machine: TOLO
- ❖ SMD Solder Paste Screening Machine: AUTOTRONIC
- ❖ SMD Pick & Place Machines: AUTOTRONIC
- ❖ SMD Flow Soldering Machine: TOLO and EPS
- ❖ Cable Stripping & Crimping Machine: MEGOMAT
- ❖ Coil Winding Machines: STRONG SUN
- ❖ Screen Printing: ATU
- ❖ Testing Benches: VARIOUS
- ❖ MRP System: LOGO TIGER



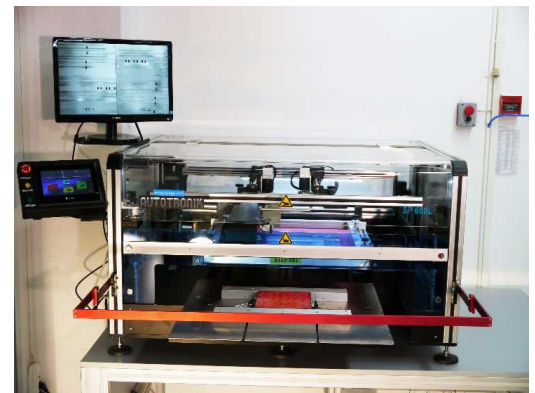
Coil & Transformer Winding



PCB Manufacturing



Final Assembly Line



Solder Paste Screening Machine

PRODUCTION PROCESSES

- ❖ Component Lead Forming Process
- ❖ Cable & Crimping Process
- ❖ Coil & Transformer Manufacturing
- ❖ Silk Screening
- ❖ Temperature and Humidity Controlled, ESD Protected SMD Room
- ❖ Automatic Component Insertion Process
- ❖ Automatic SMD Pick & Place and Soldering
- ❖ PCB Manual Assembly & Soldering Process
- ❖ PCB Cleaning Process
- ❖ Metal Cutting, Drilling Process
- ❖ Mechanical Assembly Process
- ❖ Final Assembly Process
- ❖ Testing Process
- ❖ Packing Process



SMD Pick & Place Machine



Fixture Assembly



Cable Stripping & Crimping

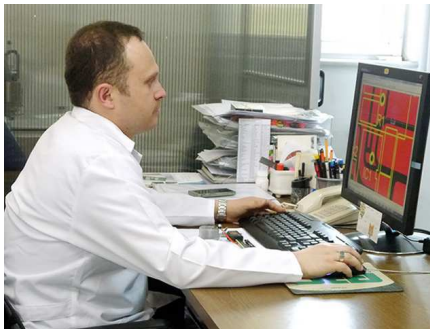


SMD Soldering Ovens

QA SYSTEM



- ✧ ISO 9001:2008 Certified
- ✧ ISO16949:2009 Certified
- ✧ ISO14001:2004 Certified
- ✧ IRIS Certified
- ✧ 2002/95/EC RoHS Complied
- ✧ EC/1907/2006 REACH Complied
- ✧ Component & Materials Incoming Inspections
- ✧ APQP Advanced Production Quality Planning
- ✧ PPAP Production Parts Approval Process
- ✧ Process FMEA Failure Mode Effect Analysis
- ✧ MSA Measurement System Analysis
- ✧ Production Functional Tests Forms: Applied 100%
- ✧ Super Control Tests Forms: Applied by sampling method
 - Functional and Specifications Tests
 - ERA Standard Specifications Tests
 - ISO16750 Test (When design changes)
 - EMC Tests (When design changes)
 - Life Tests
 - Environmental Tests
- ✧ Life and Aging Tests
- ✧ On Delivery, Quality Compliance Tests
- ✧ Test Failure Reports Analysis Forms
- ✧ Quality Improvement Workgroups



R&D CAPABILITY

- ✧ AutoCAD 2D Designing
- ✧ EasyPC PCB Designing
- ✧ Unigraphics UGS 3D Designing
- ✧ Plastic Parts Fast Prototypes
- ✧ Metal Parts Prototypes
- ✧ Micro-Controller Programming
- ✧ LCD Designing
- ✧ Coils & Transformers Designing & Production
- ✧ Electronic Laboratory Test Equipment
- ✧ Light Level and Chromaticity Measurement
- ✧ Component Reliability & Failure Analysis
- ✧ Design FMEA based on Component Reliability & Failure Analysis
- ✧ R&D Super Control Tests
 - Functional & Specifications Tests
 - ERA Specifications Test
 - ISO 16750 Tests
 - EMC Tests
 - Life Tests
 - Arrhenius Method Life Test
- ✧ Custom Design Projects